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With international search report.

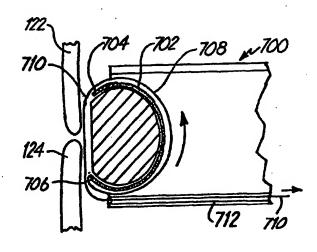
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(54) Title: MITRAL AND TRICUSPID VALVE REPAIR

(57) Abstract

A novel approach to mitral or tricuspid valve repair involves the performance of an edge-to-edge fastening/securing of opposing heart valve leaflets (122, 124) through a catheter (126) entering the heart. Thus, a device is introduced including a leaflet fastener applicator through a cardiac catheter (126) or other suitable catheter. The leaflet fastener applicator and cardiac catheter (126) can be formed into a kit. A gripper (402) can be used to hold the heart valve leaflets (122, 124) while they are fastened.



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Internatio^{, -1} Application No

PCT/Us 99/14063 A CLASSIFICATION OF SUBJECT MATTER IPC 7 A61B17/068 A61B A61B17/064 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system tollowed by classification symbols) A61B IPC 7 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Chation of document, with indication, where appropriate, of the relevant passages 1,3,10, WO 98 07375 A (COLUMBIA UNIVERSITY) 21.23 X 26 February 1998 (1998-02-26) page 3, line 30 -page 4, line 34 31,32 US 5 423 858 A (BOLANOS) X 13 June 1995 (1995-06-13) 2 figures 9,10 31 WO 98 30153 A (ELECTIVE VASCULAR) P,X 16 July 1998 (1998-07-16) figure 8 WO 97 39688 A (VNUS) A 30 October 1997 (1997-10-3θ) EP 0 684 012 A (KARLSRUHE) A 29 November 1995 (1995-11-29) -/--Patent family members are listed in annex. Further documents are listed in the continuation of box C. X T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the international published and international published in the principle or theory. * Special extegories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *E* earser document but published on or after the international filing date "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) °C° document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 18 02 2000 8 October 1999 Authorized officer Name and mailing address of the ISA

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International Application No
PCT/Us 99/14063

	ation) DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category *	Citation of document, with indication, where appropriate, of the relevant passages		
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. X Claims Nos.: 11-20 because they relate to subject matter not required to be searched by this Authority, namely: Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
Claims Nos.: because they relate to parts of the international Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This international Searching Authority found multiple inventions in this international application, as follows:
see additional sheet
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. X No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INF RMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-3,10,21,23,31,32

Valve leaflet fastener with opposing jaws adapted for holding the components of a two-part fastener and the target leaflets

2. Claims: 1,4

Leaflet fastener with suture as fastener material

3. Claims: 1,5,25-27

Valve fastener with sets of opposing arms

4. Claims: 1,6

Ring shaped valve leaflet fastener

5. Claims: 1,7,35

Two part button valve leaflet fastener with spikes, and an applicator adapted to a similarly defined fastener

6. Claims: 1,8,9,21,24

Valve leaflet fastener with a separate mechanical or suction gripper;

7. Claims: 21,22

Valve leaflet fastener with suture as actuator element;

8. Claims: 28-30

Single shaft gripper/fastener applicator

9. Claims: 33,34

Valve leaflet gripper with plunger action

Info alion on patent family members

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PCT/Up 99/14063

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